Amendments to Drawings:

The attached sheets of drawings includes changes to Figs 3, 4, 5, 6, 8 and 14. These sheets replace the original sheets 2, 3, 4, 5, 7 and 13.

In Fig. 3, the word "PROXY" is removed from step A1, and the word "PROXY" is changed to "RSVP" in step A9.

In Fig. 4, the word "UE" is changed to "GGSN" in step B10.

In Fig. 5, the word "PROXY" is removed from step C1, and the word "PROXY" is changed to "RSVP" in step C11.

In Fig. 6, the word "PROXY" is changed to the word "RSVP" in step D2.

In Fig 8, the phrase "The UE Shall be Silent" is removed from step F1, and the phrase "to be silent" is removed from step F2.

In Fig. 14, the phrase "UE Should act at RSVP PROXY" is changed to "UE should be responsible for RSVP" in step L1, and the phrase "UE is RSVP PROXY" is changed to "UE is responsible for RSVP" in step L3.

REMARKS/ARGUMENTS

Claims 1-16 are currently pending in this application. In the claims, Claim 1 has been amended to correct a typographical error. In the specification, paragraphs [0011], [0012], [0016], [0018], [0020], [0021], [0024],]0028], [0031], [0032], [0037], [0042], [0043] and the Abstract have been amended to correct typographical errors and make minor editorial changes. In the drawings, Figures 3-6, 8 and 14 have been amended to correct typographical errors and make minor editorial changes. No new matter has been introduced into the application by these amendments.

Claim Rejections - 35 USC §103

Claims 1-16 stand rejected under 35 USC §103 as being unpatentable over U.S. Patent Number 6,621,793 B2 by Widegren et al. (hereinafter "Widegren") in view of U.S. Patent Number 6,708,034 by Sen et at. (hereinafter "Sen").

The present application sets forth a novel method of unambiguously assigning and coordinating responsibility for Resource Reservation Protocol (RSVP) signaling, when both a UE and a GGSN are RSVP enabled. This arrangement has many benefits. For example, when the UE performs its own RSVP signaling, a considerable portion of its air interface resources are consumed by the signaling. This can be avoided by allowing the GGSN to act as an RSVP proxy for the UE, and perform RSVP signaling for the UE. However, without a clear assignment of signaling responsibility, communication problems can arise.

One possible result is that both the UE and the GGSN believe they are responsible for the RSVP signaling, and both provide essentially the same signaling, (a so-called race condition). This can lead to duplicative and inefficient use of communication resources and increased collisions.

On the other hand, a different possible result of not assigning clear RSVP signaling responsibility is that both the UE and the GGSN believe the other is responsible, and neither provides the RSVP signaling required to maintain the reserved path, adversely affecting the QoS of the communication session. Furthermore, the GGSN's resources can become congested. If the GGSN has been assigned to act as the UE's RSVP proxy, it may be desirable to reassign RSVP signaling responsibility back to the UE. The present application clearly assigns RSVP signaling responsibility, and allows a reassignment of RSVP signaling responsibility.

Thus, either the UE or the GGSN can be responsible for the RSVP signaling. According to the present application, the decision of which entity is responsible can be made either at a Policy Control Function (PCF) on the network, or by the GGSN, or by negotiation between the GGSN and the UE. In every case, only one device at a time is permitted to be responsible for making the decision, and both the UE and the GGSN are notified which of them is responsible for the signaling.

Neither Widegren nor Sen, alone or in combination, provide or suggest such a method. They do not recognize, and are not concerned with or directed to, the challenges associated with a GGSN acting as an RSVP proxy for a UE when using RSVP signaling over an air interface. Widegren is directed to using policy mechanisms to provide filtering and gating of data over a QoS connection. Sen is simply directed to making RSVP signaling in a wired network available to endpoints which are wireless UEs communicating with the network via an air interface. Widegren and Sen do not recognize that RSVP signaling can originate in either a UE or a GGSN, or that a GGSN can act as an RSVP signaling proxy for a UE. Instead, in both Widegren and Sen the UE is the source of the RSVP or other QoS signaling, and the GGSN acts as a translator, a filter or a gateway, but not as

an RSVP proxy. Since they don't recognize that the GGSN either might or might not act as an RSVP proxy for the UE, they are not concerned with problems that can arise as a result. Furthermore, they cannot be used to solve those problems.

Sen states that RSVP is not typically used in wireless data services networks; rather, it is useful when QoS needs to be guaranteed for a wireline terminal communicating over a network. Sen recognizes the air interface standard may have a quality of service standard, and is concerned with interfacing that standard to the RSVP-enabled routers, thus extending the RSVP mechanism, (originally designed for wired networking), to wireless devices. Nowhere does Sen mention that a GGSN or other network device can act as an RSVP messaging proxy for the UE, nor does it address the problems that can arise as a result.

Widegren is directed to "employing policy mechanisms ... to provide policy driven filtering and gating of data flow over a QoS connection...." (column 11 lines 34-36). It is useful, for example, for properly charging a subscriber for the use of network resources when those resources must be committed to a session prior to its activation. Widegren is applicable when a remote host, or a local user equipment, initiates an application which first requests end-to-end signaling, then initiates a corresponding communication session. A PCF receives session data from the application, and derives therefrom filtering/gating data. The GGSN receives this data from the PCF, and initializes a gate which is used to filter and control data flow to/from the UE. In this way, data flow can be controlled by event triggers originating in the application, in the PCF, or in the GGSN. However, once again, Widegren does not mention that a GGSN or other network device can act as an RSVP messaging proxy for the UE, nor does it address the problems that can arise as a result.

The Examiner states that Widegren discloses a PCF capable of assigning responsibility for RSVP signaling to either the GGSN or the UE at Widegren column 13 line 17 to column 14 line 16. On the contrary, in the cited lines Widegren does not disclose a PCF with that capability. Rather, Widegren therein discloses a PCF which is interrogated by a GGSN to determine whether or not establishing an access IP bearer service is permitted, and not to determine which of the UE or the GGSN is responsible for its signaling. In the cited lines, an example is described in which a remote host initiates a telephone call to a local UE using SIP signaling. Once the bearer is established, a "gate" is established at the GGSN which controls when data from the UE is permitted to enter the network, and the gate is controlled by data received from the application through the PCF. In column 14 lines 17-23, after the session is set up and when it reaches the "active phase" (i.e., in order to make the session active), a trigger is sent by the application (here, an SIP proxy) to the PCF and thence to the GGSN, to open the gate and allow the telephone call to proceed. No mention is made here or anywhere else in Widegren of the need to renew the resources reserved to maintain the QoS of the call, (which could be done using RSVP signaling), nor of assigning responsibility for renewing those resources to one of the UE or the GGSN, nor of communicating that assignment not only to the responsible device but to the other device as well, in order to avoid problems associated either with both devices thinking they are responsible for the signaling or with neither device thinking it is responsible. These problems are addressed in the present application, but are not addressed in Widegren. If both the UE and the GGSN in the cited example are RSVP enabled and the GGSN acts as the UE's RSVP proxy, nothing disclosed in Widegren will prevent these problems.

Thus, neither Widegren nor Sen, alone or in combination, provide or suggest a method of addressing potential problems that can arise when a GGSN acts as a

proxy for a UE's RSVP signaling. Based on the arguments presented above, withdrawal of the rejection of claims 1-16 is respectfully requested.

Conclusion

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 1-16, is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

Shaheen et al.

By 
Michael L. Berman
Registration No. 51,464

Volpe and Koenig, P.C.
United Plaza, Suite 1600
30 South 17th Street
Philadelphia, PA 19103
Telephone: (215) 568-6400
Facsimile: (215) 568-6499

MLB/ml